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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/598,310      | 06/25/2008  | Joseph A. Luongo     | W-392-02            | 2584             |

43840 7590 10/14/2011  
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| EXAMINER |
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GATZEMEYER, RYAN JON

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| ART UNIT | PAPER NUMBER |
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3746

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| MAIL DATE | DELIVERY MODE |
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10/14/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/598,310 | <b>Applicant(s)</b><br>LUONGO ET AL. |  |
|                              | <b>Examiner</b><br>RYAN GATZEMEYER   | <b>Art Unit</b><br>3746              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 5) ☒ Claim(s) 1-5 and 10 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-5 and 10 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 27 September 2011 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

### DETAILED ACTION

1. The applicant's amendments and remarks were received on 27 September 2011. Claims 1, 2, 4 and 10 have been amended, claims 6-9 are canceled and therefore claims 1-5 and 10 are currently pending in the application.
2. The attached office action is final

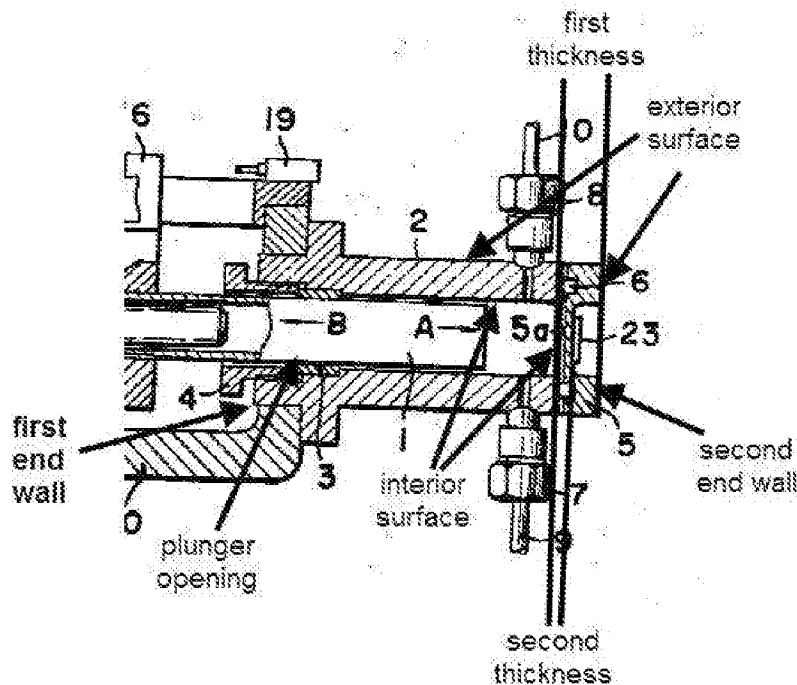
### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-2, 5 and 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sakiyama et al. US Patent 3,847,507 (hereafter “Sakiyama”).**
5. Regarding **claims 1 and 10**, Sakiyama discloses an apparatus for pumping fluid, as shown in Figure 1, comprising: a housing (2, 5) having an exterior surface and an interior surface, the interior surface defining a cylindrical chamber having a first end wall and a second end wall, the second end wall having a plunger opening through which a plunger is reciprocal in the chamber to cause fluid to enter the chamber through a fluid opening and to discharge fluid from the chamber through a fluid discharge opening (Col. 3, lines 44-55), as shown below in the attached figure below,



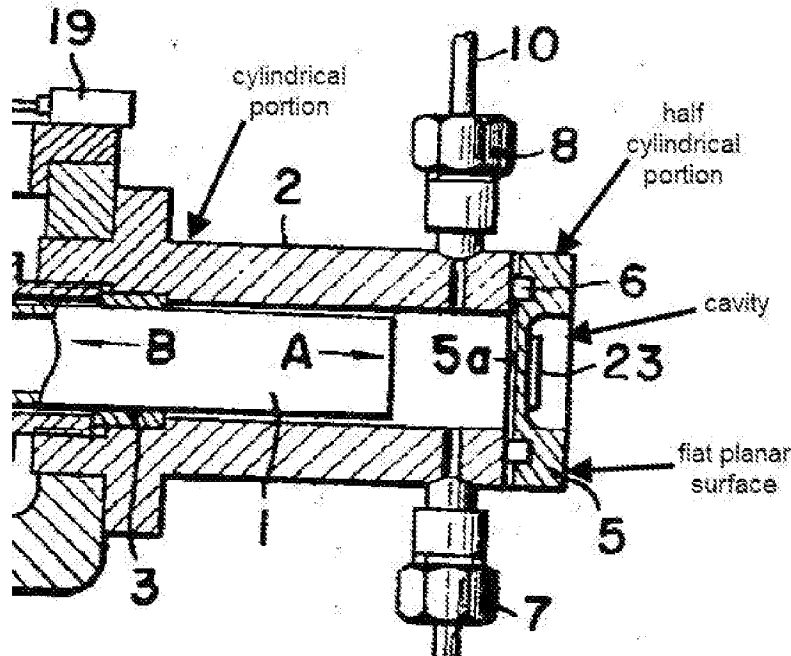
wherein the housing has an integrally formed cavity recessed into its exterior surface to provide a transducer surface (5a) which is radially spaced from the interior surface of the housing and which is disposed between said first and second end walls, and wherein a strain sensor is affixed to the transducer surface to measure deformation of the housing resulting from differences in fluid pressure within the chamber, the strain sensor producing a first signal indicative of the transducer surface assuming a first position when the chamber is at low pressure and producing a second signal indicative of the transducer surface assuming a second position when the chamber is at high pressure (Col. 4, lines 30-35).

6. Regarding **claim 10**, it is noted that the apparatus of Sakiyama as applied to claim 1 above discloses all of the structure as recited in claim 10 and would therefore be capable of performing the same method.

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7. Regarding **claim 2**, Sakiyama discloses the apparatus wherein the transducer surface (5a) is a flat surface bottom surface of the cavity (Col. 4, lines 23-35 and 50-58).

8. Regarding **claim 5**, Sakiyama discloses the apparatus wherein said exterior surface of said housing has a cylindrical portion and a half cylindrical portion, said cylindrical portion forming a base for attachment to other apparatus, said half cylindrical portion having a flat planar surface and a half cylindrical surface, as shown below in the attached figure.



### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. **Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakiyama as applied to claims 1-2, 5-6 and 10 above in view of Cook et al. WIPO Publication WO 2005/042064 (hereafter “Cook”) as evidenced by Woodard (6609883).**

12. Regarding **claims 3 and 4**, Sakiyama discloses the apparatus substantially as claimed except for wherein the housing has a composition selected from metals and metal alloys consisting of titanium, aluminum, and vanadium and wherein the housing has a composition comprising allow 6A14V.

13. Cook is relied upon to teach a pump housing having composition of titanium, aluminum and vanadium alloy 6Al4V (Page 1, lines 10-11) and further evidenced by Woodard et al US Patent 6,609,883 (hereafter “Woodard”).

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to fabricate the pump housing of Sakiyama of metals with the composition as disclosed by Cook and evidenced by Woodard because “titanium of around 0.1 mm to 0.2 mm thickness would give sufficiently low eddy losses.

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Encapsulation within such a shell would be needed to prevent winding movement" as evidenced by Woodard (Col. 10, lines 40-43).

### ***Response to Arguments***

**15. Drawings**

16. The objection to the drawings is withdrawn in view of the applicant's amendments of Figure 1.

**17. Claim Objections**

18. The objections to claims 1-10 are withdrawn in view of the applicant's amendments to claims 1 and 10.

**19. 35 U.S.C. 112 Rejections**

20. The 35 U.S.C. 112, second paragraph rejection of claim 4 is withdrawn in view of applicant's amendments to claim 4.

**21. 35 U.S.C. 102 and 103 Rejections**

22. Applicant's arguments filed 27 September 2011 have been fully considered but they are not persuasive:

23. Claim 1, as amended, is anticipated by Sakiyama because the cylinder (2, 5) has an integrally formed cavity recessed into its exterior surface to provide a transducer surface. Because both the cylinder (2) and the diaphragm (5) of Sakiyama together form the housing, the cavity is integrally formed in the housing (2, 5) recessed into the housing's exterior surface to provide a transducer surface (5a). It is noted that the interpretation of the cylinder housing as both (2) and (5) as taught by Sakiyama is valid

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because claim 1 as amended, fails to claim the entire housing as a single or monolithic integrally formed piece. The prior art of Sakiyama, using the interpretation of the housing as both (2) and (5) above, is therefore measuring the deformation of the diaphragm (5), which is interpreted as part of the housing (2, 5), resulting from differences in fluid pressure within the chamber (Sakiyama: Col. 4, lines 22-35).

### ***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

25. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN GATZEMEYER whose telephone number is (571)270-7559. The examiner can normally be reached on 9am-5pm EST.



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27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/  
Supervisory Patent Examiner, Art  
Unit 3746

RG  
5 October 2011